

Abstract

The present invention provides a polymer electrolyte where high proton conductivity and low fuel crossover are achieved at the same time, as well as a member using the same, and an object thereof is to achieve high output and high energy density in the form of a polymer electrolyte fuel cell.

A polymer electrolyte where a proton conductive polymer (A) and a polymer (B) that is different from (A) are mixed with each other, characterized in that the ratio of the amount of unfreezable water, represented by formula (S1) in the above described polymer electrolyte, is no less than 40 wt% and no higher than 100 wt% is used, and thereby, the above described object can be achieved.

$$\text{(ratio of amount of unfreezable water)} = \frac{\text{(amount of unfreezable water)}}{\text{(amount of low melting point water + amount of unfreezable water)}} \times 100 (\%) \dots (S1)$$